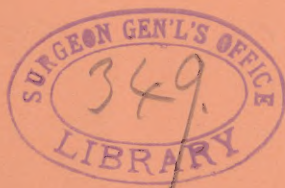


OLIVER, (C.A.)

NEW SERIES OF METRIC TEST-LETTERS AND  
WORDS FOR DETERMINING THE AMOUNT  
AND RANGE OF ACCOMMODATION.

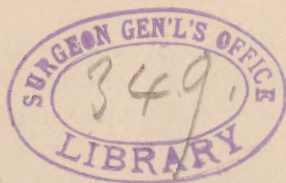




NEW SERIES OF METRIC TEST-LETTERS AND  
WORDS FOR DETERMINING THE AMOUNT  
AND RANGE OF ACCOMMODATION.

BY  
CHARLES A. OLIVER, M.D.  
OF PHILADELPHIA.

Reprinted from Transactions of American Ophthalmological Society, 1886.







## A NEW SERIES OF METRIC TEST-LETTERS AND WORDS FOR DETERMINING THE AMOUNT AND RANGE OF ACCOMMODATION.

---

THE accompanying card of reading test-letters, which has been based upon the same plan as the sheet of Metric test-letters,<sup>1</sup> presented to the Society at its last Annual Meeting, is offered for the following reasons :

*First,—The Letter.* The usual forms of Roman and Italic types, which have heretofore been employed in the ordinarily used reading tests, have been discarded. The same Snellen basis of block-letter formation that was used in the first series of letters has been accurately preserved in this, thus giving the proper visual angle for every letter and its component parts throughout the whole system of lettering. This is of great advantage, as it thereby places the obtainment and registration of the amount and range of accommodation upon the same basis as the determination of the acuity of vision, thus allowing perfect uniformity of result in the two modes of examination.

*Second,—The Character and the Arrangement of the Words.* The seven letters C D E T O L F have been made into words of one or two syllables each. These letters have been chosen because they are deemed the only ones of a formation that accurately complies with the five-minute and one-minute visual angle system of Snellen. Forty-nine words have been obtained, and are arranged into columns. Each column contains a word composed either entirely or in majority of horizontal and vertical strokes, followed by a word formed of a preponderance of curved ones ; each successive column begin-

<sup>1</sup> Vide "Trans. of the Am Ophthalmological Society," 1885, p. 130.

ning alternately with one of the two varieties. This plan gives a system of working, in which one word made of lines running mainly at ninety degrees and one hundred and eighty degrees, is in every instance followed by a word made of a majority of curved lines, no matter in what vertical or horizontal direction the columns may be read; thus making every word a valuable aid in the detection of astigmatism. Every size of type is so arranged that a new order of columns is presented to view, so as to prevent any error that might arise from memorizing; the words following each other in such an order that nothing can be remembered from context.

*Third,—The Sequence.* The smallest type is placed first, and each successive size is situated beneath in regular order, until one equivalent to two dioptrys is reached. This large type finishes the card, which leaves a separation of but one-half dioptry between this card and the large one.

*Fourth,—The Interspace.* Each word and each letter is surrounded by a space equal to or greater than its own area. This has been done by separating every letter by an area equivalent to its own, and by making the intervening widths between the columns of the same sized type equal to or greater than the horizontal spaces occupied by the words themselves. This plan keeps every letter and word separate, and renders them not liable to be confounded with any of their neighbors.

*Fifth,—The Gradation.* The following sizes have been chosen: 0.25 D., 0.50 D., 0.75 D., 1. D., 1.50 D., and 2. D., as they represent all the necessary gradations before reaching the first sized type (2.50 D.) upon the large card.

*Sixth,—The Construction.* The same method of manufacture has been pursued in obtaining the size of letters and the printing of the type as was explained in the previous paper. The card itself is made of heavy cardboard, and has rounded corners so as to prevent breakage. It has been covered by neutral-gray colored paper, in order to hide, for a time at least, the finger marks which render the ordinary sheet of reading types so dirty. The letters are printed upon a sunken surface in the centre of the card, thus keeping them entirely free from all contact by handling or by being placed upon dirty

surfaces. The frame-like margin has been made broad in order to allow greater freedom in use.

It may be safely claimed that this is the only set of reading types which has been made upon the same scientific basis that governs the types used in determining visual acuity, and therefore, by reason of this conformity, an examination of acuteness of vision and the determination of accommodative action by means of these two series, serve to place the results upon a uniform and proper foundation.

It is presented in the hopes that the advantages it may possess, shall make it of sufficient determinate value to be placed amongst the ordinary working materials required in ophthalmic practice.

James W. Queen and Co., of No. 924 Chestnut Street, Philadelphia, have kindly superintended the construction of the cards, and to them the author here desires to express his thanks for careful and satisfactory work.













